MULTIMEDIA UNIVERSITY

STUDENT ID NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 1, 2015/2016

MCC1013 – COMPUTER MODELLING

(All Sections / Groups)

17 OCTOBER 2015
2.30 PM – 4.30 PM
(2 Hours)

INSTRUCTIONS TO STUDENTS

1. This question paper consists of 4 pages including the cover page.

2. There are **TWO** sections in this paper. Please answer **ALL** questions in Section A and answer only **FOUR** out of SIX questions in Section B. Every answer in Section A carries 3 marks while in Section B each question carries 10 marks.

3. Please print all your answers on the answer booklet provided.

SECTION A *(every answer carries 3 marks, please print your answer on the answer booklet provided)*

1. Everything in the real world is three dimensional, while in the virtual world, 3D objects are two dimensional representations of three dimensional objects. 3D objects appear real because they have width, _____ and _____.

2. The atom of the 3D World is the vertex, a _____ in space. The vertex is the first dimension, simply _____ in space.

3. By default, 3ds Max has cameras that let you view your scene in a panel. The panels are known as perspective viewport, _____, _____.

4. In 3ds max, there are three most commonly used modelling systems. They are:
   - Polygon modeling- geometry
   - _____
   - _____

5. Polygon modelling are objects constructed with lines, _____ and _____, the native form of 3d graphics. There are no _____ lines in polygon.

6. There are two ways of adding more polygons during modeling process:
   - _____ - regular pattern of faces
   - _____ - irregularly by inserting new vertices and edges.

7. There are three types of clones: copy, instance and reference.
   - A copy is a simple copy and they are not _____ in any way.
   - An instance of an object means that modifying one would _____ the other.
   - A reference is a _____ between the two. If you change any parameters within the modify stack of either the clone or the original, changes would be _____. If you add modifiers to the original, this would also be applied to the reference. However, if you add modifiers to the _____, the original is NOT affected. Basically, the clone is a reference to the original.

8. In 3D graphics, _____ is the term used to explain the gradual loss in _____ of any kind of light through a medium. Objects far from the light source appear darker; objects near the source appear brighter.

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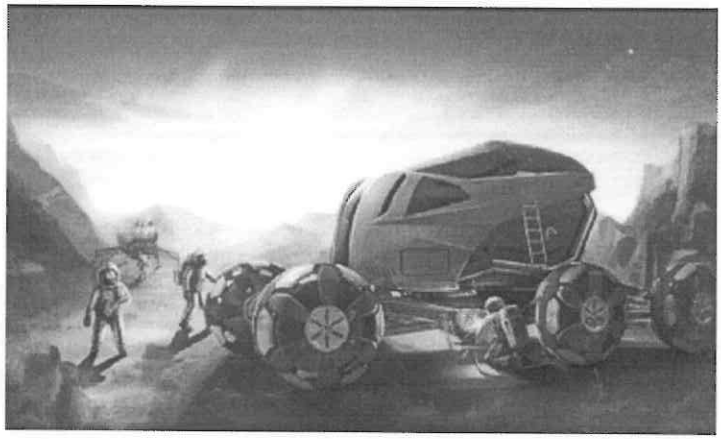
SECTION B

Question number 1, 2, 3, 4, 5 and 6 are based on this statement below. Please answer ***FOUR*** *questions ONLY. Each question carries 10 marks.*

The Problem

You are working on a multi-million dollar ***'G-Shock'*** commercials campaign. It involves all sorts of media including print, broadcast as well as internet. As the art director, you have to work with a team of designers, modellers and animators for this project. Your team has to create a futuristic outer-space environment but the story is adapted from natural human life scene. You have to build an entirely 3D environment but all the characters in the commercial are human. Here are the sample of the watch and the environment. As the person in-charge of the whole project, you have to understand all the process involved in the production.



1. Please explain how to create and model the watch, the space car and the background scene in detail. (These include the terrains, rocks, vehicles etc) (10 marks)

2. Please explain what is **photorealism** in 3D and there are 10 principles of photorealism. Please name **five** of them. (10 marks)

3. You need to apply **procedural textures** in your 3D scene. Please explain what is procedural textures and please explain the pros and cons using procedural versus image textures. (10 marks)

4. You will use photometric lighting in this scene. Please explain what is photometric lighting and give **four** examples of this type of light. (10 marks)

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5. In order to work efficiently, you need to use modifiers to model most of the buildings. Please explain in detail what are **object-space** and **world-space** modifiers. Please explain with diagrammes the difference between **extrude** and **face extrude** modifiers. (10 marks)

6. The scene and the models are heavily relying on natural looking textures to make them look realistic. You need to understand clearly the use of material editor to expedite the texturing process. Please elaborate what is a **material editor** and explain what is the difference between a **compact** and a **slate** material editor. (10 marks)

End of Paper.